

REMARKS

Favorable reconsideration of this application is respectfully requested.

Claims 1, 2, 5-7, and 9 are pending in this application. Claims 1, 2, and 7 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. patent 5,948,291 to Neylan et al. (herein "Neylan") in view of U.S. patent 6,373,026 to Kurosawa et al. (herein "Kurosawa"). Claims 5, 6, and 9 were rejected under 35 U.S.C. § 103(a) as unpatentable over Neylan and Kurosawa and further in view of U.S. patent 6,649,964 to De Steur et al. (herein "De Steur"). Those rejections are traversed by the present response as discussed next.

Initially, applicants and applicants' representative wish to thank Examiner Elve for the interview granted applicants' representative on August 11, 2008. During that interview applicants' representative presented comments as to how the claims as currently written distinguished over the applied art. Also, claim amendments were discussed to further clarify the claims over the applied art. During the interview Examiner Elve appeared to understand applicants' position, and indicated she would further consider such arguments when formally presented in a filed response. Based on the interview of the present response maintaining the claims and presenting comments to the allowability of the claims over the applied art is submitted.

Independent claim 1 is directed to a laser processing apparatus in which a laser beam is output from a laser oscillator, and with reference to Figure 1 in the present specification as a non-limiting example, onto a plurality of optical path systems 30, 40. A total reflection mirror 8 as an optical path switch can be placed into and retracted from an optical path to determine on which of the optical paths 30 or 40 the output laser beam propagates. Further, independent claim 1 recites a timing that the total reflection mirror 8 is placed into or retracted from the optical path. Specifically, claim 1 recites:

said total reflection mirror proceeds into and retracts from the optical path with a speed being *synchronized with an off timing of the laser beam* in the predetermined pulse of said laser oscillator. [Emphasis added].

That is, according to claim 1, the noted total reflection mirror 8 is moved into and retracted from the optical path synchronized with an *off timing* of the laser beam, i.e. the movement takes places *when the laser beam is off*. The other independent claims 2 and 7 recite the same or similar feature. Applicants submit such features are neither taught nor suggested by the applied art.

The new grounds for rejection cites Neylan as a primary reference, but recognizes that “[a]lthough Neylan et al. indicates a relationship between time duration and movement, the pulse involvement is not specifically taught”.¹ To overcome the recognized deficiencies in Neylan the outstanding rejection now cites Kurosawa, specifically stating:

Kurosawa et al. discloses laser beam machining using a pulsed laser. The scanner drive/laser trigger apparatus outputs the trigger of the laser oscillation for the laser oscillator at a predetermined pulse frequency and drive commands for the two beam scanner apparatus. It is possible to position a spot of the laser beam at high speed at an optional drilling position on the printed board having many drilling positions in synchronization with a pulse frequency of the laser beam radiated from the laser oscillator. In addition a reflection mirror disposed in the optical axis of the laser beam is taught.

It would have been obvious to one of ordinary skill in the art at the time of the invention to synchronize the pulses with the laser beam machining because it ensures optimal of the laser beam at all times.²

Applicants submit the above-noted grounds for rejection is misconstruing the claim features relative to the disclosure in Kurosawa. That is, the claims do not recite a synchronization of pulses with laser beam machining as taught by Kurosawa, but instead recite synchronizing a movement of a mirror into and out of an optical path with an *off*

¹ Office Action of May 19, 2008, page 3, first paragraph.

² Office Action of May 19, 2008, page 3, second and third paragraphs.

timing of the laser beam. That is, in the claimed invention the switch mirror is placed into and retracted from an optical path when a laser beam is off. Kurosawa is not directed to any similar features.

Applicants draw specific attention to Kurosawa at Figures 27-29, at which applicants submit Kurosawa discloses rotary choppers 39 mounted between a laser oscillator 32 and a reflection mirror 36 to rotate in synchronization with each other at the same speed to radiate pulse beams. That is, in Kurosawa each of the rotary choppers 39 chops the continuous laser beam to generate pulse beams. Applicants also draw specific attention to Kurosawa at column 23, line 46 et seq., at which point Kurosawa discloses the synchronization of the two rotary choppers 39 with each other and provided with a triggering operation to trigger the generation of a laser beam 27.

The claims as written recite a structure that is believed to clearly differ from Kurosawa. In the claims as written a switch mirror is either inserted into or retracted from an optical path in synchronization with an off timing of a laser beam. That is, in the claims the movement of the switching mirror only takes place *when the laser beam is off*. Kurosawa fails to teach or suggest such a feature as Kurosawa discloses the rotary choppers 39 rotate while the laser beam *is on*.

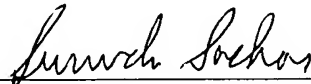
In such ways, applicants respectfully submit that the claims as written recite a contrary structure than in Kurosawa. Thereby, applicants respectfully submit no combination of teachings of Neylan in view of Kurosawa fully meets all the claim features, and thus the claims are allowable over Neylan in view of Kurosawa.

Moreover, no teachings in De Steur were cited with respect to the above-noted features, and no teachings in De Steur are believed to cure the above-noted deficiencies of Neylan in view of Kurosawa.

In view of the present response applicants respectfully submit the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413-2220
(OSMMN 03/06)

Surinder Sachar
Registration No. 34,423

I:\ATTY\SNS\26s\264741\264741US-AM.DOC